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To March 1, 2004
Preferred Communication Systems, Inc.
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CONCEPTS TO OPERATIONS, INC.

TELECOMMUNICATIONS AND INFORMATION SYSTEMS CONSULTING

RELOCATION COST ANALYSIS OF THE CONSENSUS PARTIES' REBANDING PROPSAL

Prepared for:

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October 31, 2003

Mr. Charles M. Austin
President
Preferred Communication Systems, Inc.
6311 North O'Connor Blvd.
Irving, Texas 75039

Dear Mr. Austin:

Concepts to Operation, Inc. has completed an analysis of the probable costs of the Consensus Parties' Rebanding Proposal as set forth in their Supplemental Comment filed with the Federal Communications Commission ("FCC" or "Commission") on December 24, 2002 and as modified by the Consensus Parties Reply Comment filed with the FCC on February 25, 2003.

The purpose of our relocation cost analysis and report will be for submission to the Commission in support of the Comments and Reply Comment filed by Preferred Communication Systems, Inc. on September 23, 2002, February 10, 2003 and February 25, 2003. The report will determine the probable relocation costs of the Consensus Parties' Rebanding Proposal. This is the sole purpose of our report.

Based upon the FCC License Database as of January 31, 2003 and the assumptions set forth herein, the report concludes that the probable relocation costs of the Consensus Parties' Rebanding Proposal is $3.360 billion.

We set forth a summary of the report's analysis and conclusions in the immediately following Executive Summary.

Sincerely Yours,

CONCEPTS TO OPERATIONS, INC.

Executive Summary

Introduction.

On December 24, 2002, the Consensus Parties filed a Supplemental Comment ("Supplemental Comment") with the FCC in which they modified their previously submitted Rebanding Proposal and set forth in an Appendix A thereto a fairly detailed cost analysis in support of their contention that Nextel's promised contribution of $850 million was a "reasonable estimate" of their Rebanding Proposal's total costs. The Consensus Parties further modified their Rebanding Proposal in a Reply Comment filed with the Commission on February 25, 2003 ("Reply Comment").

Pursuant to the Supplemental Comment and Reply Comment, the 800 MHz Band would be realigned as follows:

1. Public Safety, B/ILT and SMR licensees in Channels 1-120 would be moved to Nextel vacated spectrum in Channels 121-150, if available, and then to Nextel vacated spectrum in Channels 151-400;
2. Non-Nextel EA licensees in Channels 1-150 and in the Lower 80 Channels would be moved (or not) according to whether they already had constructed cellular systems or had a firm commitment to construct such systems--
    a. Constructed Systems or Firm Commitment: Non-Nextel EA licensees would be moved to the newly created "Cellular Block" (Channels 401-720) beginning with Channel 401 and would receive only the "white space" they previously held;
    b. Not Yet Constructed or No Firm Commitment:
        (1) Non-Nextel EA licensees in Channels 1-150 initially would be moved to Nextel vacated spectrum in Channels 126-150, if available, and then to Nextel vacated spectrum in Channels 151-400; following such move, these EA licensees would lose the right to offer cellular service absent a showing that its low-site and low-power system would not interfere with adjoining Public Safety, B/ILT and SMR licensees.
        (2) Non-Nextel EA licensees in the Lower 80 Channels would remain where they presently are located but would lose the right to offer cellular service absent a showing that its low-site and low-power system would not interfere with adjoining public safety, B/ILT and SMR licensees.

    Contemporaneous with the relocation of the licensees in Channels 1-120, Nextel would vacate Channels 121-400 and occupy Channels 1-120.

3. Public Safety in Channels 321-400 would move to Nextel vacated spectrum in Channels 151-320, if available;

4. Nextel then would exchange its Channels 1-120 for the NPSPAC Channels on a region-by-region basis.

Methodology.

In Appendix A to their Supplemental Comment, the Consensus Parties provided support for their contention that Nextel's promised contribution of $850 million would pay the "reasonable costs" of their Rebanding Proposal. In providing its rebanding cost estimates, the Consensus Parties initially developed three categories of licenses impacted by their Proposal: (1) Public Safety 1-120; (2) B/ILT & SMR 1-120; and (3) Public Safety in NPSPAC Channels and Channels 321-400.

For license data (Licensees, Discrete Frequencies, Call Signs, Frequencies (For Radio Retune/Replacement Cost Analysis), Discrete Sites and Sites X Frequencies (For Infrastructure Cost Analysis), we downloaded the FCC License databases as of January 31, 2003 for the following four categories of licenses: (1) Public Safety licenses in Channels 1-120; (2) B/ILT & SMR licenses in Channels 1-120; (3) Public Safety licenses in the NPSPAC Channels; and (4) Public Safety licenses in Channels 321-400.

To develop a direct comparison format for its relocation cost analysis spreadsheet, we initially determined to use the Consensus Parties' assumptions for Radio Retune/Replacement Costs except as follows: (1) increased the cost per retune from $50 to $100 per radio; (2) increased the replacement cost per radio from $2,500 to $3,000; and (3) increased the radio replacement percentage figure for public safety licensees in the NPSPAC Channels from 1% to 30%. Our higher figures were based upon conversations with the representatives of the major public safety equipment vendors and public safety licensees and, in the case of the higher radio replacement percentage figure, the Comment filed by Motorola, Inc. with the FCC on May 6, 2002.

We then decided to use the format and the Infrastructure Cost line items employed by the Consensus Parties in Public Safety 1-120 License Category in Appendix A for the four License Categories set forth above. Since the Consensus Parties omitted the number of sites from its B/ILT & SMR 1-120, we determined the Infrastructure Costs' assumptions on a per frequency basis. We then applied these per frequency Infrastructure Cost assumptions to the Consensus Parties' other two License Categories and our three remaining License Categories. As a check, we conducted conversations with the representatives of the major public safety equipment vendors and public safety licensees to confirm the reasonableness of the assumptions for the Infrastructure Cost items.

Relocation Cost Estimates.

Based upon the FCC License Databases and the cost assumptions set forth above, we determined the relocation costs of the Consensus Parties' Rebanding Proposal as follows:

1. Public Safety In Channels 1-120:

a. Radio Retune/Replacement Costs:	$ 38,346,540
b. Infrastructure Retune/Replacement Costs:	$ 48,305,871
c. Other Retune/Replacement Costs:	$ 5,577,250
d. Total Retune/Replacement Costs:	$ 92,229,661

2. B/ILT & SMR in Channels 1-120:

a. Radio Retune/Replacement Costs:	$ 89,229,000
b. Infrastructure Retune/Replacement Costs:	$ 67,457,560
c. Other Retune/Replacement Costs:	$ 22,703,000
d. Total Retune/Replacement Costs:	$ 179,389,560

3. Public Safety in NPSPAC Channels:

a. Radio Retune/Replacement Costs:	$2,331,522,070
b. Infrastructure Retune/Replacement Costs:	$ 358,134,226
c. Other Retune/Replacement Costs:	$ 14,234,500
d. Total Retune/Replacement Costs:	$2,703,890,796

4. Public Safety in Channels 321-400:

a. Radio Retune/Replacement Costs:	$ 186,325,407
b. Infrastructure Retune/Replacement Costs:	$ 185,543,845
c. Other Retune/Replacement Costs:	$ 12,874,000
d. Total Retune/Replacement Costs:	$ 384,743,252

Total Retune/Replacement Costs:	$3,360,253,269

Consensus Parties' Rebanding Proposal
Relocation Cost Analysis Report

I. Introduction

A. Consensus Parties' Appendix A

On December 24, 2002, the Consensus Parties filed a Supplemental Comment with the Federal Communications Commission ("FCC" or "Commission") in which it modified its Rebanding Proposal previously submitted in its Comment filed with the FCC on August 7, 2002. In support of this modified Rebanding Proposal, the Consensus Parties attached an Appendix A in which they set forth an estimate of their Proposal's relocation costs. On February 25, 2003, the Consensus Parties filed a Reply Comment with the Commission in which they further modified certain aspects of their Rebanding Proposal.

According to Appendix A the Consensus Parties engaged in a six-step process[1] to estimate the cost of retuning "800 MHz incumbent private wireless and public safety communications systems."[2] Based upon the licensing information they assembled and categories of B/ILT, H-SMR and public safety licenses they developed therefrom, the Consensus Parties then developed retuning cost estimates for incumbent licensees in each category. According to the Consensus Parties, some of the major cost items are as follows:

> "(1) Labor to physically retune repeaters and mobile/portable radios;
> (2) Critical elements necessary to modify certain types of Motorola systems;
> (3) Additional or improved combiners to allow for tighter channel spacing within a given system;
> (4) Replacement of radios that cannot be retuned; and
> (5) Loaner equipment to allow for necessary system redundancy during some of the more complex retunes."[3]

Based upon all of the above, Nextel estimated that a total of 2.6 million mobile units needed to be retuned under the Consensus Parties' Rebanding Proposal. Nextel estimated that 5% of B/ILT and SMR radios would have to be replaced during the realignment process and that approximately 1% of public safety radios would have to be replaced. In a footnote 6, Nextel indicated that it based its estimate concerning public safety radios on its research showing that "public safety users tend to upgrade end-user radios more frequently than Business/Industrial/SMR operators." Nextel thus concluded that since public safety radios generally are newer, a lower percentage cannot be retuned and must be replaced.[4]

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[1] Consensus Parties Supplemental Comment (Dec.24, 2002), Appendix A-1,-2.
[2] *Id*. at 2.
[3] *Id*. at 3.

The Consensus Parties divided the 800 MHz incumbent licenses affected by their Rebanding Proposal into three categories:

(1) B/ILT and SMR incumbents in Channels 1-120;
(2) Public Safety incumbents in Channels 1-120; and
(3) Public Safety incumbents in NPSPAC Channels and Channels 321-400.

For Public Safety 1-120 the Consensus Parties provided a detailed analysis of both the Radio Retune and Infrastructure Retune Costs and provided both the number of frequencies and sites for the following three sub-categories of Public Safety systems it developed:

(1) Conventional Systems;
(2) Voice-Channel Retune Systems; and
(3) Control-Channel Retune Systems.

Unfortunately, the Consensus Parties chose not to provide a similar format and detailed analysis for the B/ILT and SMR in 1-120. As a result, the number of discrete sites the Consensus Parties used in this License Category was unavailable to us to employ in preparing our relocation cost estimate.

For B/ILT and SMR in 1-120, the Consensus Parties created the following four subcategories:

(1) Conventional;
(2) SMR;
(3) YO/YB; and
(4) Four Largest Utilities.

The Consensus Parties set forth certain overall assumptions and a summary of cost by category.[5] No other details were provided.

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[4] *Id*. at 4, n.6. In the Supplemental Comment, the public safety organizations expressed some reservation concerning the percentage of public safety radios that might need to replaced, particularly in the NPSPAC Channels due to the age of many of the radios and programming constraints. Consensus Parties Supplemental Comment at 6. The public safety organizations further noted that the "substantial cost difference between replacing and reprogramming a radio is such that small variations in the total number of units will have a significant impact on the total cost of the Consensus Plan." *Id*. at 6-7. According to the Consensus Parties, the "uncertainty" over the percentage of public safety radios that would need to replaced is mitigated by (1) the basic requirement that no public safety licensees will be required to move without full compensation, and (2) the requirement that funding be secured to move an entire NPSPAC Region before any moves are initiated in that Region. *Id*. at 7.

[5] Consensus Parties, Supplemental Comment (Dec. 24, 2002), Appendix A-6.

For Public Safety in NPSPAC Channels and Channels 321-400, the Consensus Parties developed five subcategories:

(1) Conventional & Mutual Aid;
(2) Single Site/Single Site with Back-Up;
(3) Simulcast;
(4) Multisite Systems; and
(5) Very Large Systems.

For this License Category, the Consensus Parties provided detailed licensing information for each of the five subcategories set forth above and a detailed set of relocation cost assumptions.[6]

B. Preferred Communication Systems, Inc. Relocation Cost Analysis

Preferred Communication Systems, Inc. retained Concepts to Operation, Inc., a RF engineering and consulting firm headquartered in Annapolis, Maryland in February 2003 to conduct its own study to determine whether Nextel Communications, Inc.'s promise to contribute $850 million during the next seven years will in the words of the Consensus Parties "cover the reasonable costs" of retuning/relocating public safety, B/ILT and SMR incumbents.

We initially downloaded the FCC License Bases dated January 31, 2003 for the following License Categories and converted the raw data into Excel format:

(1) Public Safety in Channels 1-120;
(2) B/ILT and SMR in Channels 1-120;
(3) NPSPAC; and
(4) Public Safety in Channels 321-400.

We then calculated the following:

(1) Licensees;
(2) Discrete Frequencies;
(3) Call Signs;
(4) Frequencies (For Radio Retune/Replacement Cost Analysis);
(5) Discrete Sites;
(6) Sites X Frequencies (Base Stations for Infrastructure Cost Analysis); and
(7) Total Radios.

To determine (4) above for B/ILT and SMR in Channels 1-120, We multiplied the number of frequencies held by a particular licensee by 100,

[6] *Id*. at 13-14.

the figure used by the Consensus Parties in their Appendix A. To determine such figure for Public Safety in Channels 1-120 and 321 -400 as well as the NPSPAC Channels, we multiplied the number of frequencies held by a particular licensee by 167, the figure used by the Consensus Parties in their Appendix A.

To determine (5) above, we initially calculated the number of sites for which a particular frequency has been licensed to a particular licensee. We then added these figures to determine the total number of Base Stations that would need to be retuned.

As noted above, the Consensus Parties failed to use a consistent format with detailed analysis for each of their three License Categories. As a result, we adopted the format used by the Consensus Parties in Public Safety 1-120 and applied it to the four License Categories it developed. This approach allowed us to determine the probable relocation costs of the Consensus Parties Rebanding Proposal for all four of its License Categories even though little or no detail had been provided by the Consensus Parties in Appendix with respect to their calculations concerning B/ILT and SMR in Channels 1-120.

With respect to the calculation of Infrastructure Retune/Replacement Costs, we determined the costs of the following items on a per frequency basis set forth immediately below:

(1) Retune Repeaters and Other Site Work: $3,777.19 per frequency;
(2) Replace Repeaters: $ 716.18 per frequency;
(3) Replace Channel Elements: $ 9.65 per frequency;
(4) Replace Combiners $ 193.30 per frequency;
(5) System Planning & Engineering $ 92.18 per frequency;
(6) Replace Code Plugs: $ 307.16 per frequency;
(7) Duplicate Systems: $6,631.30 per frequency; and
(8) Console Replacement: $ 124.34 per frequency.

We then applied the figures calculated for Public Safety in Channels 1-120 for the Infrastructure Retune/Replacement Costs to the other three License Categories.

As a check on the above approach, we conducted several conversations with the representatives of the major public safety equipment vendors and public safety licenses to determine the reasonableness of the above figures. Based upon these conversations, the estimated cost for retuning each base radio was $5,000. These representatives also estimated that the necessary engineering, consulting and coordination cost would be 10% of the total parts and labor costs.

The per frequency approach adopted by us assumes an average Infrastructure Retune/Replacement Cost outside of Duplicate Systems of $5,220 per frequency. As noted above, we used the coordination, FCC filing fee and consulting fee cost assumptions set forth by the Consensus Parties in Appendix A.[7]

With the exceptions noted below, We used the assumptions used by the Consensus Parties in Appendix A[8]:

(1) Cost/Retune Per Radio: $100 rather than $50; Concepts to Operation, Inc. based its higher figure on several conversations with the representatives of public safety equipment vendors and public safety licensees.
(2) Cost/Replacement Per Radio: $3,000 rather than $2,500; We based its higher figure on several conversations it had with representatives of public safety equipment vendors and public safety licensees who indicated that the price range of such radios would be $2,600-$4,500. We used an average figure of $3,000 as the replacement cost of radios. We believe that $3,500 would be a more accurate figure.
(3) Replacement Percentage of NPSPAC Radios: 30% rather than 1%; We based its higher figure on conversations with the representatives of major public safety equipment vendors, which are supported by Motorola, Inc.'s Comment filed on May 6, 2002 at pages 25-31.[9]

II. Discussion

A. Public Safety in Channels 1-120

According to the FCC License Database as of January 31, 2003, there are 395 Licensees, 1,780 Discrete Frequencies, 927 Call Signs, 4,076 Frequencies (For Radio Retune/Replacement Analysis), 6,509 Sites X Frequencies (Base Stations for Infrastructure Cost Analysis) and 297,260 Total Radios. Using the assumptions set forth above and a 1% figure for Radio Replacement, the total relocation cost would be $92.229 million. According to the Consensus Parties' calculations in Appendix A, the total cost would be $57.473, a difference of approximately $34.756 million.

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[7] We chose the conservative figure of $10,000 as an average Consulting Fee per licensee even though several commenters found this figure "ridiculously low". *See* Public Safety Improvement Coalition, Comment (Feb. 10, 2003), at 4, n.6.

[8] We therefore used the following assumptions for Radio Retune/Replacement Costs:
(1) Public Safety Radios per Frequency: 167;
(2) B/ILT & SMR Radios per Frequency: 100;
(3) Retunes Per Radio: 1;
(4) Public Safety (Except NPSPAC Channels) Radio Replacement Percentage: 1%; and
(5) B/ILT & SMR Radio Replacement Percentage: 5%.

[9] Motorola, Inc. Comment (May 6, 2002), at 25-31.

The primary reason for the difference in cost estimates is the use of incorrect license information in Appendix A by the Consensus Parties.

B. B/ILT & SMR in Channels 1-120

According to the FCC License Database as of January 31, 2003, there are 2,128 Licensees, 3,642 Discrete Frequencies, 4,767 Call Signs, 4,885 Frequencies (For Radio Retune/Replacement Analysis), 5,692 Sites X Frequencies (Base Stations for Infrastructure Cost Analysis) and 364,200 Total Radios. Using the assumptions set forth above and a 5% figure for Radio Replacement, the total relocation cost would be $179.389 million. According to the Consensus Parties' calculations in Appendix A, the total cost would be $129.382, a difference of approximately $50.007 million. The primary reason for the difference in cost estimates is the use of incorrect license information in Appendix A by the Consensus Parties. Interestingly enough, in this License Category, use of the per frequency Infrastructure Retune/Replacement Cost assumptions discussed above, produces a figure $8.4 million less than the Consensus Parties set forth in their Appendix A.

C. NPSPAC

According to the FCC License Database as of January 31, 2003, there are 668 Licensees, 14,393 Discrete Frequencies, 2,451 Call Signs, 18,884 Frequencies (For Radio Retune/Replacement Analysis), 30,218 Sites X Frequencies (Base Stations for Infrastructure Cost Analysis) and 2,403,631 Total Radios. Using the assumptions set forth above and a 30% figure for Radio Replacement, the total relocation cost would be $2.331 billion million. According to the Consensus Parties' calculations in Appendix A, the total cost for the NPSPAC Channels and Public Safety in Channels 321-400 would be $644.212 million, a difference of approximately $1.686 billion. The primary reasons for the difference in cost estimates are as follows:

(1) use of incorrect license information in Appendix A by the Consensus Parties;
(2) use of a 30% radio replacement figure rather than the 1% figure employed by the Consensus Parties in Appendix A; and
(3) use of the per frequency Infrastructure Retune/Replacement Cost assumptions discussed above; this approach produced a figure $225.842 million greater than the Consensus Parties set forth in their Appendix A.

D. Public Safety in Channels 321-400

According to the FCC License Database as of January 31, 2003, there are 896 Licensees, 8,649 Discrete Frequencies, 1,797 Call Signs, 8,649 Frequencies (For Radio Retune/Replacement Analysis), 15,656 Sites X Frequencies (Base Stations for Infrastructure Cost Analysis) and 1,444,383 Total Radios. Using the assumptions set forth above and a 1% figure for Radio Replacement, the total relocation cost would be $384.743 million million. As noted above, according to the Consensus Parties' calculations in Appendix A, the total cost for the NPSPAC Channels and Public Safety in Channels 321-400 would be $644.212 million. Adding the $2.331 billion cost for relocating the NPSPAC Channels to the $384.743 million figure for Public safety in Channels 321-400, the combined figure would be $2.715 billion, a difference of approximately $2.070 billion. The primary reasons for the difference in cost estimates concerning Public Safety in Channels 321-400 are as follows:

(1) use of incorrect license information in Appendix A by the Consensus Parties; and
(2) use of the per frequency Infrastructure Retune/Replacement Cost assumptions discussed above.

III. Conclusion.

Contrary to the contention of the Consensus Parties in their Supplemental Comment filed on December 24, 2002, Nextel Communications, Inc.'s promise to contribute $850 million over seven years does not reflect a reasonable estimate of the total relocation costs of the Consensus Parties Rebanding Proposal. Rather, the $850 million figure represents approximately twenty-five percent (25%) of the total costs. As noted above, our estimate of $3.360 billion as the probable total cost is based upon the FCC License database as of January 31, 2003, many of the assumptions used by the Consensus Parties in Appendix A, and where it used different assumptions, upon several conversations with both the major public safety equipment vendors and public safety licensees and Motorola, Inc.'s Comment filed on May 6, 2002.

We sought to keep its assumptions and resulting estimate conservative and did not include items the Consensus Parties now have agreed to include in reimbursable relocation costs such as the hardware and software costs of the major public safety equipment vendors. We also did not include its analysis items apparently omitted from Appendix A such as the cost of additional tower sites, shelters, additional microwave capacity, which according to several public safety and CII licensee commenters, are required for certain

Public Safety and Critical Infrastructure Industry systems.[10] These additional items, and a slight increase in the replacement figure for B/ILT radios in Channels 1-120 or Public Safety radios in Channels 1-20 and 321-400 would increase our cost estimate considerably.[11]

[10] *See, e.g.,* Cinergy Corporation, Comment (Feb. 10, 2003) at 44-46; Boeing, Comment (Feb. 10, 2003), at 24; City of Philadelphia, Comment, at 3-4; Border Area Coalition, Comment (Feb. 10, 2003), at 12-13; Michigan Department of Information Technology, Communications Division, Comment (Feb. 10, 2003), at 3-4. *See generally* ALLTEL Communications, AT&T Wireless, Cellular Telecommunications & Internet Association, Cinergy Corporation, Cingular Wireless, City of Baltimore, Maryland, Consumers Energy Company, Duke Energy, National Rural Electric Cooperative Association, Southern LINC, United States Cellular, and Verizon Wireless, Ex Parte Comment (August 7, 2003), at 5-6.

[11] *See, e.g.,* Ameren Corporation, Comment (Feb. 10, 2003), at 5 :"The Supplemental Comments estimate of $150 million is based upon a questionable assumption that only five percent of B/ILT equipment will have to be replaced in the course of rebanding. Ameren estimates that rebanding would require a replacement of at least ten percent of its radio equipment and expects that many CI entities with older systems will have to replace considerably more equipment."

RELOCATION COST CHART

RELOCATION COST ANALYSIS	CONSENSUS PARTIES	PREFERRED
PUBLIC SAFETY 1-120		
RADIO RETUNE/REPLACEMENT		
LICENSEES:	316	395
DISCRETE FREQUENCIES:	1,432	1,780
CALL SIGNS:	660	927
FREQUENCIES (FOR RADIO RETUNE/REPLACEMENT COST ANALYSIS):	NA	4,076
DISCRETE SITES:	1,102	NA
SITES x FREQUENCIES (BASE STATIONS FOR INFRASTRUCTURE COST ANALYSIS):	3,016	6,509
RADIOS PER FREQUENCY:	167	167
TOTAL RADIOS	239,144	297,260
RETUNES PER RADIO:	1 OR 2	1
COST/RETUNE PER RADIO:	$50	$100
1% REPLACEMENT:	$11,837,628	$29,428,740
10% REPLACEMENT:	$10,761,480	$26,753,400
20% REPLACEMENT	$9,565,760	$23,780,800
30% REPLACEMENT	$8,370,040	$20,808,200
COST/REPLACEMENT PER RADIO:	$2,500	$3,000
1% REPLACEMENT:	$5,978,600	$8,917,800
10% REPLACEMENT:	$59,786,000	$89,178,000
20% REPLACEMENT	$119,572,000	$178,356,000
30% REPLACEMENT	$179,358,000	$267,534,000

CTO: The Consensus Parties included this line item as "1-120 Frequencies" only for the Public Safety In Channels 1-120 License Category. We assumed for purposes of this analysis that this line item was the equivalent of our Call Sign-Frequency-Site Unique Combination line item that we used to calculate base station modification costs.

CTO: The Consensus Parties used a range of 136-167 radios per frequency in Appendix A to their 2002 Supplemental Comment filed on December 24, 2002.

CTO: This figure is based upon our conversations with the major public safety equipment vendors and public safety licensees, $100 per radio for retune costs is more accurate than the $50 figure used by the Consensus Parties.

CTO: This figure is based upon our conversations with the major equipment vendors, who estimate that the radio replacement cost would range from $2,600-$4,500. We therefore used an average of $3,000. A $3,500 average figure probably is more accurate.

TOTAL RADIO RETUNE/REPLACEMENT COSTS:		
1% RADIO REPLACEMENT:	**$17,816,228**	**$38,346,540**
10% RADIO REPLACEMENT:	**$70,547,480**	**$115,931,400**
20% REPLACEMENT	**$119,574,500**	**$178,359,000**
30% REPLACEMENT	**$185,336,600**	**$276,451,800**

CONSENSUS PARTIES' ACTUAL NUMBER:	**$14,954,850**

INFRASTRUCTURE RETUNE/REPLACEMENT

RETUNE REPEATERS & OTHER SITE WORK:	$11,392,000	$15,395,820	$3,777.19
REPLACE REPEATERS:	$2,160,000	$2,919,151	$716.18
REPLACE CHANNELS ELEMENTS:	$29,100	$39,327	$9.65
REPLACE COMBINERS:	$583,000	$787,901	$193.30
SYSTEM PLANNING & ENGINEERING:	$278,000	$375,706	$92.18
REPLACE CODE PLUGS:	$926,400	$1,251,992	$307.16
DUPLICATE SYSTEMS:	$20,000,000	$27,029,178	$6,631.30
CONSOLE REPLACEMENT:	$375,000	$506,797	$124.34

CTO: Since the Consensus Parties did not provide the number of sites for the Four License Categories, we used the Total Number of Frequencies as the denominator in determining the Base Station Modification Costs for each of the line items the Consensus Parties used in Public Safety 1-120 in their Appendix A to the Supplemental Comment filed on December 24, 2002. We then used these figures to calculate such costs for the remaining three License Categories.

TOTAL INFRASTRUCTURE RETUNE/REPLACEMENT COSTS:	**$35,743,500**	**$48,305,871**

CONSENSUS PARTIES' ACTUAL NUMBER:	**$35,744,000**

RELOCATION COST CHART

OTHER RETUNE/REPLACEMENT COSTS

COORDINATION FEES/FREQ.:	$250	$250
TOTAL FREQUENCIES:	3,016	6,509
COORDINATION FEES:	$754,000	$1,627,250
CONSULTING FEES/LICENSEE:	$10,000	$10,000
LICENSEES:	316	395
CONSULTING FEES:	$3,160,000	$3,950,000

TOTAL OTHER RETUNE/REPLACEMENT COSTS	**$3,914,000**	**$5,577,250**

CONSENSUS PARTIES' ACTUAL NUMBER:	**$3,733,040**

TOTAL RELOCATION COSTS		
1% RADIO REPLACEMENT:	**$57,473,728**	**$92,229,661**
10% RADIO REPLACEMENT:	**$110,204,980**	**$169,814,521**
20% REPLACEMENT	**$159,232,000**	**$232,242,121**
30% REPLACEMENT	**$224,994,100**	**$330,334,921**

CONSENSUS PARTIES' ACTUAL NUMBER:	**$54,431,890**

CTO: We used a "plug" number here to acertain how the Consensus Parties determined the radio / retune and radio / replacement cost figures. The Consensus Parties' Appendix A to their Supplemental Comment filed on December 24, 2002 omits this information.

B/ILT & SMR 1-120

RADIO RETUNE/REPLACEMENT

LICENSEES:	1,058	2,128
DISCRETE FREQUENCIES:	1,500	3,642
CALL SIGNS:	3,102	4,767
FREQUENCIES (FOR RADIO RETUNE/REPLACEMENT COST ANALYSIS):	NA	4,885
DISCRETE SITES:	3,123	NA
SITES x FREQUENCIES (BASE STATIONS FOR INFRASTRUCTURE COST ANALYSIS):	7,460	5,692
RADIOS PER FREQUENCY:	100	100
TOTAL RADIOS	150,000	364,200
RETUNES PER RADIO:	1	1
COST/RETUNE PER RADIO:	$50	$100
1% REPLACEMENT:	NA	$36,055,800
5% REPLACEMENT	$7,125,000	$34,599,000
25% REPLACEMENT:	NA	$27,315,000
COST/REPLACEMENT PER RADIO:	$2,500	$3,000
1% REPLACEMENT:	NA	$10,926,000
5% REPLACEMENT:	$18,750,000	$54,630,000
25% REPLACEMENT:	NA	$273,150,000

CTO: According to the FCC License Database, there are 896 Non-Nextel SMR Site-Specific Licensees within Channels 1-120. 1,232 B/ILT Licensees are within Channels 1-120.

CTO: According to the FCC License Database, 2,786 Non-Nextel SMR Call Signs are located within Channels 1-120. 1,981 B/ILT Call Signs are located in Channels 1-120.

TOTAL RADIO RETUNE/REPLACEMENT COSTS:		
1% RADIO REPLACEMENT:	**NA**	**$46,981,800**
5% RADIO REPLACEMENT:	**$25,875,000**	**$89,229,000**
25% RADIO REPLACEMENT:	**NA**	**$300,465,000**

RELOCATION COST CHART

INFRASTRUCTURE RETUNE/REPLACEMENT

RETUNE REPEATERS & OTHER SITE WORK:	$28,177,825	$21,499,756	$3,777.19
REPLACE REPEATERS:	$5,342,706	$4,076,499	$716.18
REPLACE CHANNELS ELEMENTS:	$71,978	$54,919	$9.65
REPLACE COMBINERS:	$1,442,036	$1,100,277	$193.30
SYSTEM PLANNING & ENGINEERING:	$687,626	$524,660	$92.18
REPLACE CODE PLUGS:	$2,291,427	$1,748,365	$307.16
DUPLICATE SYSTEMS:	$49,469,496	$37,745,358	$6,631.30
CONSOLE REPLACEMENT:	$927,553	$707,725	$124.34
TOTAL INFRASTRUCTURE RETUNE/REPLACEMENT COSTS:	**$88,410,647**	**$67,457,560**	

CTO: Since the Consensus Parties did nor provide the number of sites for the Four Categories, we used the Total Number of Frequencies as the denominator in determining the Base Station Modification Costs for each of the line items the Consensus Parties used in Public Safety 1-120 in their Appendix A to the December 24, 2002 Sulpplemental Comment. We then used these figures to calculate such costs for the remaining three License Categories.

OTHER RETUNE/REPLACEMENT COSTS

COORDINATION FEES/FREQ.:	$190	$250
TOTAL FREQUENCIES:	7,460	5,692
COORDINATION FEES:	$1,417,400	$1,423,000
CONSULTING FEES/LICENSEE:	5,000	$10,000
LICENSEES:	1,058	2,128
CONSULTING FEES:	$5,290,000	$21,280,000
TOTAL OTHER RETUNE/REPLACEMENT COSTS:	**$6,707,400**	**$22,703,000**

TOTAL RELOCATION COSTS		
1% RADIO REPLACEMENT:		**$137,142,360**
5% RADIO REPLACEMENT:	**$120,993,047**	**$179,389,560**
25% RADIO REPLACEMENT:		**$390,625,560**

CONSENSUS PARTIES' ACTUAL NUMBER:	**$129,382,450**

RELOCATION COST CHART

NPSPAC				

RADIO RETUNE/REPLACEMENT

LICENSEES:	NA	668
DISCRETE FREQUENCIES:		14,393
CALL SIGNS:	NA	2,451
FREQUENCIES (FOR RADIO		
RETUNE/REPLACEMENT COST ANALYSIS):		18,884
DISCRETE SITES:	NA	NA
SITES X FREQUENCIES (BASE STATIONS FOR		
INFRASTRUCTURE COST ANALYSIS):	NA	30,218
RADIOS PER FREQUENCY:	167	167
TOTAL RADIOS	NA	2,403,631
RETUNES PER RADIO:	1	1
COST/RETUNE PER RADIO:	$50	$100
1% REPLACEMENT:	NA	$237,959,469
10% REPLACEMENT:	NA	$216,326,790
20% REPLACEMENT	NA	$192,290,480
30% REPLACEMENT	NA	$168,254,170
COST/REPLACEMENT PER RADIO:	NA	$3,000
1% REPLACEMENT:	NA	$72,108,930
10% REPLACEMENT:	NA	$721,089,300
20% REPLACEMENT	NA	$1,442,178,600
30% REPLACEMENT	NA	$2,163,267,900

CTO: The Consensus Parties combined Public Safety in Channels 321-400 and NPSPAC so we cannot obtain separate numbers for the following: Licensees; Discrete Frequencies; Call Signs; Frequencies (For Radio Retune / Replacement Cost Analysis); Discrete Sites; Sites X Frequencies (Base Stations for Infrastructure Cost Analysis); and Total Radios.

TOTAL RADIO RETUNE/REPLACEMENT COSTS:		
1% REPLACEMENT:	**NA**	**$310,068,399**
10% REPLACEMENT:	**NA**	**$937,416,090**
20% REPLACEMENT	**NA**	**$1,634,469,080**
30% REPLACEMENT	**NA**	**$2,331,522,070**

INFRASTRUCTURE RETUNE/REPLACEMENT

RETUNE REPEATERS & OTHER SITE WORK:	**NA**	$114,139,077	$3,777.19
REPLACE REPEATERS:	**NA**	$21,641,538	$716.18
REPLACE CHANNELS ELEMENTS:	**NA**	$291,560	$9.65
REPLACE COMBINERS:	**NA**	$5,841,212	$193.30
SYSTEM PLANNING & ENGINEERING:	**NA**	$2,785,346	$92.18
REPLACE CODE PLUGS:	**NA**	$9,281,815	$307.16
DUPLICATE SYSTEMS:	**NA**	$200,384,615	$6,631.30
CONSOLE REPLACEMENT:	**NA**	$3,757,212	$124.34

CTO: Since the Consensus Parties did not provide the number of sites for the Four Categories, we used the Total Number of Frequencies as the denominator in determining the Base Station Modification Costs for each of the line items the Consensus Parties used in Public Safety 1-120 in their Appendix A to the December 24, 2002 Supplemental Comment. We then used these figures to calculate such costs for the remaining three License Categories.

TOTAL INFRASTRUCTURE RETUNE/REPLACEMENT COSTS:	**NA**	**$358,134,226**

OTHER RETUNE/REPLACEMENT COSTS

COORDINATION FEES/FREQ.:	$190	$250
TOTAL FREQUENCIES:	NA	30,218
COORDINATION FEES:	NA	$7,554,500
CONSULTING FEES/LICENSEE:	$10,000	$10,000
LICENSEES:	NA	668
CONSULTING FEES:	NA	$6,680,000

TOTAL OTHER RETUNE/REPLACEMENT COSTS	**NA**	**$14,234,500**

TOTAL RELOCATION COSTS		
1% RADIO REPLACEMENT:	**NA**	**$682,437,125**
10% RADIO REPLACEMENT:	**NA**	**$1,309,784,816**
20% RADIO REPLACEMENT	**NA**	**$2,006,837,806**
30% RADIO REPLACEMENT	**NA**	**$2,703,890,796**

RELOCATION COST CHART

PUBLIC SAFETY IN 321-400

RADIO RETUNE/REPLACEMENT

LICENSEES:	NA	896
DISCRETE FREQUENCIES:	NA	8,649
CALL SIGNS:	NA	1,797
FREQUENCIES (FOR RADIO RETUNE/REPLACEMENT COST ANALYSIS):	NA	8,649
SITES x FREQUENCIES (BASE STATIONS FOR INFRASTRUCTURE COST ANALYSIS):	NA	15,656
RADIOS PER FREQUENCY:	167	167
RETUNES PER RADIO:	1	1
TOTAL RADIOS	NA	1,444,383
COST/RETUNE PER RADIO:	$50	$100
1% REPLACEMENT:	NA	$142,993,917
10% REPLACEMENT:	NA	$129,994,470
20% REPLACEMENT	NA	$115,550,640
30% REPLACEMENT	NA	$101,106,810
COST/REPLACEMENT PER RADIO:	$2,500	$3,000
1% REPLACEMENT:	NA	$43,331,490
10% REPLACEMENT:	NA	$433,314,900
20% REPLACEMENT	NA	$866,629,800
30% REPLACEMENT	NA	$1,299,944,700

TOTAL RADIO RETUNE/REPLACEMENT COSTS:		
1% REPLACEMENT:	**NA**	**$186,325,407**
10% REPLACEMENT:	**NA**	**$563,309,370**
20% REPLACEMENT	**NA**	**$982,180,440**
30% REPLACEMENT	**NA**	**$1,401,051,510**

INFRASTRUCTURE RETUNE/REPLACEMENT

RETUNE REPEATERS & OTHER SITE WORK:	NA	$59,135,660	$3,777.19
REPLACE REPEATERS:	NA	$11,212,520	$716.18
REPLACE CHANNELS ELEMENTS:	NA	$151,058	$9.65
REPLACE COMBINERS:	NA	$3,026,342	$193.30
SYSTEM PLANNING & ENGINEERING:	NA	$1,443,093	$92.18
REPLACE CODE PLUGS:	NA	$4,808,925	$307.16
DUPLICATE SYSTEMS:	NA	$103,819,629	$6,631.30
CONSOLE REPLACEMENT:	NA	$1,946,618	$124.34

CTO: Since the Consensus Parties did not provide the number of sites for the Four License Categories, we used the Total Number of Frequencies as the denominator in determining the Base Station Modification Costs for each of the line items the Consensus Parties used in Public Safety 1-120 in their Appendix A to the December 24, 2002 Sulpplemental Comment. We then used these figures to calculate such costs for the remining three License Categories.

TOTAL INFRASTRUCTURE RETUNE/REPLACEMENT COSTS:	**NA**	**$185,543,845**

OTHER RETUNE/REPLACEMENT COSTS

COORDINATION FEES/FREQ.:	$190	$250
TOTAL FREQUENCIES:	NA	15,656
COORDINATION FEES:	NA	$3,914,000
CONSULTING FEES/LICENSEE:	NA	$10,000
LICENSEES:	NA	896
CONSULTING FEES:	NA	$8,960,000

TOTAL OTHER RETUNE/REPLACEMENT COSTS	**NA**	**$12,874,000**

TOTAL RELOCATION COSTS		
1% RADIO REPLACEMENT:	**NA**	**$384,743,252**
10% RADIO REPLACEMENT:	**NA**	**$761,727,215**
20% RADIO REPLACEMENT	**NA**	**$1,180,598,285**
30% RADIO REPLACEMENT	**NA**	**$1,599,469,355**

RELOCATION COST CHART

COMBINATION OF PUBLIC SAFETY 321-400
AND NPSPAC (CONSENSUS PARTIES' FORMAT)

RADIO RETUNE/REPLACEMENT

LICENSEES:	1,137	1,564
DISCRETE FREQUENCIES:	NA	23,042
CALL SIGNS:	5,033	4,248
FREQUENCIES (FOR RADIO RETUNE/REPLACEMENT COST ANALYSIS):	NA	
SITES x FREQUENCIES (BASE STATIONS FOR INFRASTRUCTURE COST ANALYSIS):	52,305	45,874
RADIOS PER FREQUENCY:	167	167
RETUNES PER RADIO:	1	1
TOTAL RADIOS	NA	3,848,014
COST/RETUNE PER RADIO:	$50	$100
1% REPLACEMENT:	$259,935,500	$380,953,386
10% REPLACEMENT:	NA	$346,321,260
20% REPLACEMENT	NA	$307,841,120
30% REPLACEMENT	NA	$269,360,980
COST/REPLACEMENT PER RADIO:		
1% REPLACEMENT:	$77,980,650	$43,334,490
10% REPLACEMENT:	NA	$505,423,830
20% REPLACEMENT	NA	$1,587,719,100
30% REPLACEMENT	NA	$2,742,123,300

TOTAL RADIO RETUNE/REPLACEMENT COSTS:		
1% REPLACEMENT:	**$337,916,150**	**$424,287,876**
10% REPLACEMENT:	**NA**	**$851,745,090**
20% REPLACEMENT	**NA**	**$1,895,560,220**
30% REPLACEMENT	**NA**	**$3,011,484,280**

CONSENSUS PARTIES' ACTUAL NUMBER:	**$337,916,150**

INFRASTRUCTURE RETUNE/REPLACEMENT

RETUNE REPEATERS & OTHER SITE WORK:	$197,565,836	$173,274,737	$3,777.19
REPLACE REPEATERS:	$21,357	$18,731	$0.41
REPLACE CHANNELS ELEMENTS:	$504,667	$442,617	$9.65
REPLACE COMBINERS:	$10,110,681	$8,867,554	$193.30
SYSTEM PLANNING & ENGINEERING:	$4,821,217	$4,228,439	$92.18
REPLACE CODE PLUGS:	$16,066,098	$14,090,741	$307.16
DUPLICATE SYSTEMS:	$346,850,133	$304,204,244	$6,631.30
CONSOLE REPLACEMENT:	$6,503,440	$5,703,830	$124.34

TOTAL INFRASTRUCTURE RETUNE/REPLACEMENT COSTS:	**$582,443,429**	**$510,830,893**

CONSENSUS PARTIES' ACTUAL NUMBER:	**$284,988,750**

CTO: Since the Consensus Parties did not provide the number of sites for the Four License Categories, we used the Total Number of Frequencies as the denominator in determining the Base Station Modification Costs for each of the line items the Consensus Parties used in Public Safety 1-120 in their Appendix A to the December 24, 2002 Sulpplemental Comment. We then used these figures to calculate such costs for the remaining three License Categories.

RELOCATION COST CHART

OTHER RETUNE/REPLACEMENT COSTS

COORDINATION FEES/FREQ.:	$190	$250
TOTAL FREQUENCIES:	52,305	45,874
COORDINATION FEES:	$9,937,950	$11,468,500
CONSULTING FEES/LICENSEE:	$10,000	$10,000
LICENSEES:	1,137	NA
CONSULTING FEES:	$11,370,000	NA
TOTAL OTHER RETUNE/REPLACEMENT COSTS:	**$21,307,950**	**$11,468,500**

CONSENSUS PARTIES' ACTUAL NUMBER:	**$21,307,950**

TOTAL RELOCATION COSTS		
1% RADIO REPLACEMENT:	**$941,667,529**	**$946,587,269**
10% RADIO REPLACEMENT:	**NA**	**$1,374,044,483**
20% RADIO REPLACEMENT	**NA**	**$2,417,859,613**
30% RADIO REPLACEMENT	**NA**	**$3,533,783,673**

CONSENSUS PARTIES' ACTUAL NUMBER:	**$644,212,850**

TOTAL RELOCATION COSTS FOR PUBLIC SAFETY 1-120, B/ILT & SMR 1-120, NPSPAC & PUBLIC SAFETY 321-400 USING CONSENSUS PARTIES' ASSUMPTIONS IN PUBLIC SAFETY 1-120		
1%-5% REPLACEMENT	**$1,120,134,303**	**$1,296,552,398**
		$1,338,799,598
10% REPLACEMENT	**NA**	**$2,631,952,112**
20% REPLACEMENT	**NA**	**$3,756,420,651**
30% REPLACEMENT	**NA**	**$4,976,014,761**

CONSENSUS PARTIES' ACTUAL NUMBER:	**$828,027,190**

CTO: This number is based upon a 1% radio replacement figure for Public Safety and NPSPAC and a 5% figure for B/ILT and SMR.

CTO: This number is based upon a 1% radio replacement both for Public Safety and NPSPAC and B/ILT & SMR.

CTO: This number is based upon a 1% radio replacement figure for Public Safety and NPSPAC and a 5% figure for B/ILT & SMR.

TOTAL RELOCATION COSTS FOR PUBLIC SAFETY 1-120, B/ILT & SMR 1-120, NPSPAC & PUBLIC SAFETY 321-400 USING CONSENSUS PARTIES' ASSUMPTIONS IN PUBLIC SAFETY 1-120		
1% (PS 1-120, 321-400 AND NPSPAC)-5% B/ILT REPLACEMENT	**$1,120,134,303**	**$1,296,552,398**
1% (BOTH PS 1-120 AND 321-400)-30% NPSPAC-5% B/ILT		**$3,360,253,269**

CTO: This number is based upon a 1% radio replacement figure for Public Safety and NPSPAC and a 5% figure for B/ILT & SMR.

CTO: This number is based upon a 1% radio replacement both for Public Safety and NPSPAC and B/ILT & SMR.

CTO: This number is based upon a 1% radio replacement figure for Public Safety In Channels 1-120 and 321-400, a 5% figure for B/ILT & SMR and a 30% figure for NPSPAC.

RELOCATION COST CHART

Assumptions:
Radio/Retune Replacement

1. The number of Licensees, Discrete Frequencies, Call Signs, Frequencies for Radio/Retune/ Replacement Cost and Sites X Frequencies (Base Stations) for Infrastructure Cost Analysis were taken directly from the FCC's Databases.
2. The number of Radios Per Frequency (167 for Public Safety and NPSPAC and 100 for B/ILT and SMR). was taken from the Consensus Parties' Supplemental Comment, Appendix A.
3. The number of 1 Retune Per Radio were taken from the Consensus Parties' Supplemental Comment, Appendix A.
4. The $100 Cost/Retune Per Radio was taken from conversations with the major Equipment Vendor representatives and representatives of Public Safety licensees.
5. The Cost Replacement per Radio figure of $3,000 was taken from conversations with the major Equipment Vendor representatives and representatives of public safety licensees who estimated a range of $2,600-$4,500 per Radio.

Infrastructure Retune/Replacement

1. The $3,777 per frequency (Base Stations) figure for Retune Repeaters & Other Site Work	$3,777.19
was taken from the Consensus Parties' Supplemental Comment, Appendix A.	$716.18
2. The $716 per frequency (Base Stations) figure for the Replace Repeaters line item	$9.65
was taken from the Consensus Parties' Supplemental Comment, Appendix A.	$193.30
3. The $9.65 per frequency (Base Stations) figure for the Replace Channels Elements item	$92.18
was taken from the Consensus Parties' Supplemental Comment, Appendix A.	$307.16
4. The $193 per frequency figure for the Replace Combiners line item	$6,631.30
was taken from the Consensus Parties' Supplemental Comment, Appendix A.	$124.34
5. The $92 per site figure for the System Planning & Engineering line item	
was taken from the Consensus Parties' Supplemental Comment, Appendix A.	
6. The $307 per frequency figure for the Replace Code Plugs line item .	
was taken from the Consensus Parties' Supplemental Comment, Appendix A	
7. The $6,631 per frequency figure for the Duplicate Systems line item	
was taken from the Consensus Parties' Supplemental Comment, Appendix A.	
8. The $124 per frequency figure for the Console Replacement line item	
was taken from the Consensus Parties' Supplemental Comment, Appendix A.	

Other Replacement Costs

1. The Coordination Fees/Freq. figure of $250 was taken from the Consensus Parties' Supplemental Comment, Appendix A which estimated a range of $190-$250.
2. The Frequencies figure was taken directly from the FCC's Databases.
3. The Consulting Fees/Licensees figure of $10,000 was taken from the upper range of figures used in the Consensus Parties' Supplemental Comment, Appendix A. According to the Public Safety Omprovement Coalition and several other Commenters in this proceeding, this figure is "ridiculous" and far too low.